PREPARE

THE SOIL IN THE SEED BED—

WAR GARDEN SERIES 4

State Horticultural Society
Frederic Cranefield, Secretary

in cooperation with

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K. L. Hatch, Assistant Director

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GARDEN SOILS AND GARDEN MAKING

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The soils expert groups soils, with fine distinctions, into many classes. The farmer and the gardener call them "light" or "heavy", "rich" or "poor", "warm" or "cold" soils and make a "base hit" every time.

In the language of the farmer a light soil is one containing more sand than clay. It is easily worked either in spring or summer, and is also a warm soil for it absorbs heat more readily than a clay soil. But as a rule, sandy soils are lower in plant food elements than are the heavier soils.

The heavy soil is one having more clay than sand and in proportion as the clay predominates is it heavy and cold, but it usually contains abundant plant food.

It is plain, then, that an ideal garden soil is one that is neither very light nor very heavy. It does not follow, however, that we should fail to have a garden even if the ideal soil is not available. Some very excellent gardens have been made on very unpromising sites. It's largely a matter of hard work.

Don't Disturb Much Subsoil:

Below the 4 to 8 inches of mellow, usually black, surface soil of tilled land lies a different kind of soil called the subsoil. It is **not** mellow because it has probably not been stirred for at least ten thousand years. It is usually red clay. Sometimes it is blue clay. Whatever its color, gardeners should leave it undisturbed and not turn much of it up on the surface of the garden by too deep spading. An inch or two

won't do any harm. It contains plant food but usually in a form that is not available until sunshine, rain and wind have acted on it for a few years. You can't afford to wait, so leave the subsoil where it is; it will hold water for your plants next summer.

Make Haste Slowly:

No matter what kind of soil you have in your garden **it must not be worked when it is wet.** If it is it will be hard, lumpy and wholly intractable all season. You will lose and not gain by working soil before it is fit to work.

When is it fit? There is no hard and fast rule but here is a simple test that will answer all practical purposes.

Turn up a spadeful of soil, grab a handful and squeeze it. If it retains the shape of your hand and the finger marks, and is smooth and pasty-like to the touch, it is not fit. If you cannot squeeze the mass lightly without **breaking** it, if it crumbles in your hand, go ahead, there is no time to lose. Such a rough and ready, offhand solution of so difficult a problem as this requires the application of common sense along with it but the writer feels perfectly safe in leaving it in just this way.

First Aids to the Gardener:

(1) If your garden is anywhere but on a side hill you can probably advance by several days the time when it will be fit to work by a little digging and ditching so as to carry off the surface water. This should be done as soon as the frost is out of the ground.

(2) Instead of spading or plowing the garden before it is fit, it is usually possible to find an odd corner somewhere on the premises, even if only 2 x 4 feet, that is higher and drier than the garden. Maybe it is the flower bed

in the front yard or a border alongside the house. Dig and rake this and plant a little lettuce seed and a little radish seed, or mix them, and a few onion sets. This emergency garden will serve as a curb on your very natural impatience, give some early vegetables and will not interfere in the least with flower gardening later in the season.

(3) Or, cover a space in the back yard, 4 x 6 feet, with coal ashes a foot deep and on top of this 2 to 4 inches of soil. This quantity of dry soil can usually be found somewhere nearby, even if borrowed from a high spot in a neighboring lot or field. Build around this garden a rough frame of boards, sow seeds, and cover frame nights and on cold or rainy days with two storm windows or, lacking these, with cheese cloth. Whatever else you do keep out of the garden until the soil is fit to work.

Manures:

The soil of almost any garden is capable of producing satisfactory crops without manure of any kind if properly prepared in the spring and properly cultivated during the growing season.

The right kind of manure properly applied will certainly give increased yields but the wrong kind may be worse than none at all. The right kind is well-rotted stable manure; it is fine in texture and mixes readily with the soil. Also it is "pre-digested"; the plant food contained in it has been made ready, by the process of decay, for use by the plants.

The wrong kind is fresh stable manure containing much straw or litter. This must all be turned under so deeply that the plant roots do not get to it until midsummer or it interferes with cultivation. Being coarse it serves to "dry out" the soil by interfering

with the movements of soil water. Better use none at all.

Commercial Fertilizers:

Of the mineral fertilizers, sodium nitrate and potash are practically unobtainable on account of war conditions. Acid phosphate is nearly in the same class and is not usually readily obtainable in small quantities. The various stock-yards products, including pulverized sheep manure, are quick acting fertilizers that may either be mixed with the soil when spading or plowing or used later as a top-dressing.

Mineral fertilizers must be applied with great caution to growing plants as in slight excess they may kill the plants outright.

These are all very expensive and seldom give adequate returns to the amateur for the money invested in them.

None of these statements should be construed as an argument against the use of fertilizers The market gardener knows that he can make money by using extraordinary quantities of fertilizers; in fact he is not apt to make much money unless he does use a liberal amount Your case is different; you are not so much concerned about making a profit on your land and time as in growing a respectable crop of vegetables You can do it without any fertilizer if you handle your soil right.

Coal Ashes:

Heavy soils may be much improved by a liberal use of coal ashes. Unless much wood has been burned in the furnace in addition to the coal there is no danger in using too much. It is better to sift the ashes to remove clinkers which prove a source of annoyance when hoeing. Coal ashes contain little or no fertility.

Plowing:

Small plots, say 20 by 50 feet or even larger, may be spaded, but when the plot exceeds one-tenth of an acre and is so situated that a team can be used it will pay to have it plowed if it can be properly done.

A farmer knows how to plow, but the average city man, who happens to own a plow, doesn't. He thinks he does, but he doesn't. If possible, get a farmer or an ex-farmer to plow; you won't need to tell him how to do it; he knows more about it than you do. If you are so unfortunate as to get a city farmer to plow suggest to him that all of the soil ought to be turned over; that a plow that is made to cut only 10 or 12 inches cannot by any possibility turn 16 or 18 inches, the rest will merely be covered by the soil really plowed. This is the "cut and cover" trick, a money-maker for the man who is plowing by the job but poor business for the gardener. Further suggest to him that it is a saving of horseflesh to plow 4 to 6 inches deep rather than to root around in the clay subsoil and turn it on top. This will please him and help you.

The Harrow:

If the garden-to-be is sod, plowing is not enough. The time and strength required to work down tough, sod-plowed land with hand-tools is really more than the crops that can be grown on it will be worth. A disk harrow will thoroughly pulverize and level the ground after plowing and is the best tool to use. In lieu of this a heavy spike-tooth harrow may be used, but once is not enough. Five or six times will be much better.

Spading:

There is a knack to spading that can be acquired only by practice. It is

quite as easy to cut and cover as in plowing. The spading fork with four flat tines is better than a spade for digging; it is lighter, penetrates hard soil easier than a spade and is easier to keep clean and bright. A gardener who has had long experience in spading describes the process as follows:

"Strong shoes with good solid soles should be worn when spading or the feet will become sore.

"Start at one corner of the garden with the back towards the ground to be spaded. Shove the spade well into the ground, using the ball of the foot to push the spade in. In solid ground, especially in starting, several shoves may be necessary to send the spade well in. Lift out the spadeful of soil and throw it from you across the hole, turning it over as it is thrown out. If lumpy, as it is apt to be, hit it with the back of the spade. Move sideways the width of the spade and repeat the operation until the other side of the garden is reached. Then step back and work over to the starting side again, but throwing the dirt this time forward into the ditch made the first time across. Take as large a spadeful as may be sliced off quickly and easily."

Raking:

If spading is a knack, raking a freshly dug garden is a fine art. By a proper use of the rake lumps are broken and the surface leveled. Of this the expert quoted above says:

"Level the ground and make the soil fine with a hand rake. The use of a rake offers opportunity to develop considerable skill in moving dirt quickly from high spots and filling in low places in the operation of raking.

"If the garden is small and maximum results from the space are desired,

further working of the soil will pay. If the soil is of a heavy clayey nature and the spading and raking fail to break up the lumps we usually 'tramp' the ground to further break the lumps. That is, we step back and forth over the garden with footsteps close together so as to pack the soil and crush lumps. A roller would do the work more quickly and easily. It is then raked over again, and, if necessary, we spade and rake it a second time.

"Even in gardens that have been plowed with a horse it will often pay to spade up corners not well plowed or that have been heavily packed where the horses have turned.

"All of the garden will not be planted immediately following the first working of the soil and if the surface is packed with beating rains it must be worked over again before planting.

"It is very important that the soil be in the best possible condition before seeds and plants are put in.

"No amount of after cultivation will make up for careless work in the first preparation of the garden."

This cannot be emphasized too much especially in the case of the smaller seeds. The infant of the plant world is not unlike the infant of the animal world; it must be afforded the best possible opportunity for development.

The next circular in this series will be "Sowing the Seed," by Frederic Cranefield, Secretary of the State Horticultural Society.

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